



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,294	07/09/2003	Shigeo Murakami	58604-029	7075
7590 McDermott, Will & Emery 600 13th Street, N.W. Washington, DC 20005-3096			EXAMINER HANG, VU B	
			ART UNIT 2625	PAPER NUMBER
			MAIL DATE 02/04/2009	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/615,294

Applicant(s)

MURAKAMI, SHIGEO

Examiner

Vu B. Hang

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-10,12-18,20-27 and 29-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-10,12-18,20-27 and 29-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 03/23/2007 and 10/30/2003
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

- This office action is responsive to the communication filed on 10/29/2008.
- The amendments received on 10/29/2008 have been entered and made of record.
- Claims 1, 3-10, 12-18, 20-27 and 29-34 are pending in the application.

Response to Arguments

1. Applicant's arguments filed on 10/29/2008, with respect to the cited prior art and the amended independent Claims 1, 10 18 and 27, have been fully considered and are persuasive. Therefore, the previous rejections of Claims 1, 3-10, 12-18, 20-27 and 29-34 have been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Keller et al. (US Patent 4,649,502).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3-6, 10, 12-14, 18, 20-23, 27 and 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keller et al. (US Patent 4,649,502).

4. Regarding **Claims 1 and 18**, Keller discloses a quality measuring method for comparing an image of reference printing plate and a printed image of a print corresponding to an image of the reference printing plate for controlling the ink feeding rates of a printing machine (see Fig.1

(3,51), Fig.2 (2,3,5), Col.2, Line 21-48 and Col.4, Line 34-37), the method comprising: a reading step for reading the image of reference printing plate and the printed image of the print (see Fig.2 (3,5,6), Col.2, Line 65 – Col.3, Line11 and Col.4, Line 16-23); a representative color determining step for determining, from image data, a representative color characterizing the printed image of the print, and positions of the representative color (see Fig.1 (51,52), Col.3, Line 16-21, Col.3, Line 67 – Col.4, Line 8 and Col.4, Line 38-41, [Note: the prevailing color from CMYK are determined in a print zone to determine the change in ink feed needed for the print zone.]); and a calculating step for carrying out a comparative calculation of color data in the positions of the representative color of the image of reference printing plate and color data in positions of the representative color of the printed image of print, to create control data for controlling the ink feeding rates of the printing machine (see Fig.1 (52,53), Col.3, Line 67 – Col.4, Line 16 and Col.4, Line 34-41), wherein the representative color and the positions thereof are determined for respective zone areas on a printing paper corresponding to ink keys in each ink well of the printing machine (see Fig.1 (53,54), Col.3, Line 67 – Col.4, Line 8 and Col.4, Line 38-41).

5. Keller fails to expressly disclose using an image of reference paper for comparison with the printed image of print, and determining the representative color and the positions thereof for respective rectangular sections on a printing paper. Keller, however, discloses using an image of reference printing plate for comparison with the printed image of print (see Fig.1 (3,51), Fig.2 (2,3,5), Col.2, Line 21-48 and Col.4, Line 34-37), and also teaches using an image from color control strips and halftone films as reference for the comparison (see Col.1, Line 21-23 and Col.10, Line 9-12). Keller further discloses determining the representative color and the

positions thereof for respective zones on a printing paper (see Fig.1 (53,54), Col.3, Line 67 – Col.4, Line 8 and Col.4, Line 38-41).

6. At the time of the invention, it would have been obvious for one skilled in the art to use the image of reference paper for comparison with the printed image of print. The motivation would be for preference reasons. The designer may prefer to apply the print quality measuring method using an ink jet printing machine, instead of ones that use printing plates to generate the print image. One skilled in the art could easily use a reference paper with an ink jet printing machine to apply the print quality measuring method taught by Keller. It is further obvious for one skilled in the art to determine the representative color and the positions thereof for respective rectangular zones on a printing paper. The motivation would be to determine the parameters for calculating the ink feeding rates for predefined areas on a printing paper. One skilled in the art could easily set the print processing zones taught by Keller to be rectangular sections.

7. Regarding **Claims 3 and 20**, Keller further discloses wherein the mage data has at least three color components (see Fig.1 (51) and Col.3, Line 16-21), the representative color determining step being executed to classify pixels in each of the zones corresponding to ink keys according to tones of each of the four color components (see Fig.1 (51,52), Col.3, Line 16-21, Col.3, Line 67 – Col.4, Line 8 and Col.4, Line 38-41), and determine the representative color and a position thereof from pixels included in a predetermined class interval (see Fig.1 (53,54), Col.3, Line 67 – Col.4, Line 8 and Col.4, Line 38-41).

8. Regarding **Claims 4 and 21**, Keller discloses the print quality measuring method as defined in Claim 3 but fails to expressly disclose creating a histogram with the tones of each of the color components for each of the pixels in the predefined zone. Keller, however, teaches

using a densitometer to measure the reflectance value for each of the color components for each of the pixels in the predefined zone (see Fig.2 (3) and Col.3, Line 1-24), and determining the representative color and the positions thereof in a print zone (see Fig.1 (51,52), Col.3, Line 16-21, Col.3, Line 67 – Col.4, Line 8 and Col.4, Line 38-41,[Note: the prevailing color from CMYK are determined in a print zone to determine the change in ink feed needed for the print zone.]). Keller further teaches an individual color can be identified and isolated based on the color reflectance information (see Col.6, Line 42-50). At the time of the invention, it would have been obvious for one skilled in the art to create a histogram with the tones of each of the color components for each of the pixels in the predefined zone and select representative color with the maximum frequency in the histogram. The motivation would be to identify a dominant color in a print area to adjust the ink feed controls for that particular area.

9. Regarding **Claims 5 and 22**, Keller teaches the print quality measuring method as defined in Claim 4, but fails to expressly disclose wherein the position of the representative color is the position having maximum area formed by the pixels included in the class interval. Keller, however, teaches determining the surface coverage of a color in a print area based on the reflectance value measured (see Fig.2 (3), Col.3, Line 1-24 and Col.6, Line 30-38). At the time of the invention, it would have been obvious for one skilled in the art to select the representative color based on a position having maximum area formed in a class interval. The motivation would be to identify a dominant color in a print area to adjust the ink feed controls for that particular area. The reflectance value and surface area coverage information would identify the representative color for a particular print area.

10. Regarding **Claims 6 and 23**, Keller further discloses wherein the image data for determining the representative color is of plate making data used at plate making time (see Fig.1 (3), Col.4, Line (34-38 and Col.10, Line 9-12).

11. Regarding **Claims 10 and 27**, the rationale provided for the rejection of Claim 1 is incorporated herein.

12. Regarding **Claims 12 and 29**, the rationale provided for the rejection of Claim 3 is incorporated herein.

13. Regarding **Claims 13 and 30**, the rationale provided for the rejection of Claim 4 is incorporated herein.

14. Regarding **Claims 14 and 31**, the rationale provided for the rejection of Claim 5 is incorporated herein.

15. Claims 7-9, 24-26, 15-17 and 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keller et al. (US Patent 4,649,502) in view of Takemoto (US Patent 6,211,973 B 1).

16. Regarding **Claims 7 and 24**, Keller teaches the print quality measuring method as define in Claim 1 but fails to disclose a gray control color determining step for determining, from the image data, a gray color expressed in substantially achromatic color and positions of the gray control color. Takemoto, however, teaches a color transforming method, wherein color correction is performed on the print data through using a color chart reference information and a achromatic color chart reference information (gray color) (see Fig. 1 and Col.2, Line 22-37). Takemoto further teaches the processing the color data and the gray color data together for the color correction process to achieve a desired color image (see Col.3, Line 54 - Col.4, Line 6).

17. Keller and Takemoto are combinable because they are from the same field of endeavor, name color image data processing methods. At the time of the invention, it would have been obvious for one skilled in the art to include the processing of a gray control color for determining, from the image data, a gray color expressed in substantially achromatic color and positions of the gray control color, and creating the control data for controlling ink feeding rates of the print machine, by using results of a comparative calculation of the gray control color, as well as the results of a comparative calculation of color data. The motivation would be to include gray balancing for certain areas of the image data. The gray balancing, along with the color data of the image would be used to adjust the gray tones in the appropriate areas of the color image. The corrected/adjusted image data would provide the key information for controlling ink feeding rates for the printing machine during printing.

18. Regarding **Claims 8 and 25**, Keller and Takemoto teach the method of Claim 7 but fail to expressly disclose performing the comparative calculation for the gray control color when the representative color of the image is devoid of one of the three color components. At the time of the invention, it would have been obvious for one skilled in the art to perform the comparative calculation for the gray control color when the representative color of the image is devoid of one of the three color components. The motivation would be to perform gray balancing in areas of the image data where gray tones need to be adjusted. The areas of the image data where gray balancing needs adjustments are likely to be devoid of one of the three color components of RGB since the gray tone is likely to be emphasized in these areas.

19. Regarding **Claims 9 and 26**, Keller and Takemoto teach the method of Claim 7 but fail to expressly disclose selectively using the results of the comparative calculations of the

representative color and the results of the comparative calculations of the gray control color, or by using a compromise in an appropriate ratio of the results of the two comparative calculations. Keller, however, teaches using the results of the comparative calculation of color data in the positions of the representative color of the image of reference printing plate and color data in positions of the representative color of the printed image of print, to create control data for controlling the ink feeding rates of the printing machine (see Fig.1 (52,53), Col.3, Line 67 – Col.4, Line 16 and Col.4, Line 34-41). Takemoto, however, teaches the processing the color data and the gray color data together for the color correction process to achieve a desired color image (see Col.3, Line 54 - Col.4, Line 6).

20. At the time of the invention, it would have been obvious for one skilled in the art to selectively use the results of the comparative calculations of the representative color and the results of the comparative calculations of the gray control color, or a compromise in an appropriate ratio of the results of the two comparative calculations. The motivation would be to adjust the image data to the desired color. The results of the comparative calculations of the representative color and the gray color, or the compromise ratio of the results of the two comparative calculations would provide the appropriate color density information for the ink exposure setting in the printing machine.

21. Regarding **Claims 15 and 32**, the rationale provided for the rejection of Claim 7 is incorporated herein.

22. Regarding **Claims 16 and 33**, the rationale provided for the rejection of Claim 8 is incorporated herein.

23. Regarding **Claims 17 and 34**, the rationale provided for the rejection of Claim 9 is incorporated herein.

Conclusion

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vu B. Hang whose telephone number is (571)272-0582. The examiner can normally be reached on Monday-Friday, 9:00am - 6:00pm.

25. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on (571) 272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

26. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Vu B. Hang/
Examiner, Art Unit 2625

/David K Moore/

Application/Control Number: 10/615,294
Art Unit: 2625

Page 10

Supervisory Patent Examiner, Art Unit 2625